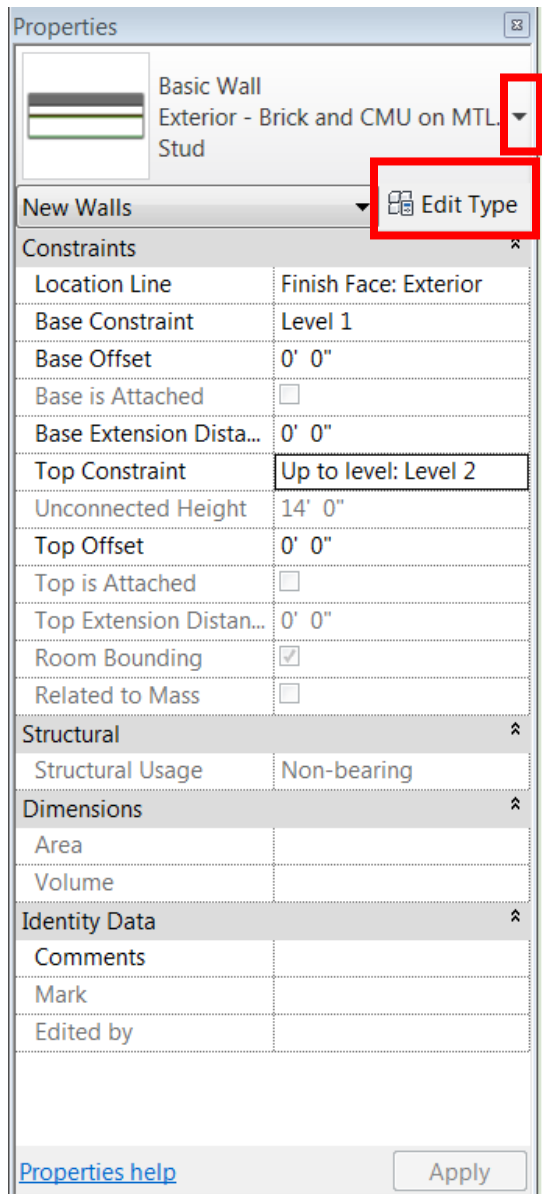


## Creating walls with multiple materials in depth and height (stacked walls)

Besides the default basic walls provided in Revit you can have any material as structure or finishing on either side of the wall.

For example you can create an Exterior wall which has a structure of CMU on metal stud which is covered with brick from one side and plywood sheathing from inside.

To do so go to **Home** menu and click on **Wall**, choose the basic wall that you want to modify from the drop down menu.



The screenshot shows the Revit Properties palette for a wall. The 'Basic Wall' dropdown menu is open, showing three options: 'Basic Wall', 'Exterior - Brick and CMU on MTL', and 'Stud'. The 'Exterior - Brick and CMU on MTL' option is selected. The 'Edit Type' button is also highlighted. Below the dropdown menu, the 'New Walls' section shows a list of wall types. The 'Constraints' section contains various parameters for the wall, including 'Location Line', 'Base Constraint', 'Base Offset', 'Base is Attached', 'Base Extension Dista...', 'Top Constraint', 'Unconnected Height', 'Top Offset', 'Top is Attached', 'Top Extension Distan...', 'Room Bounding', and 'Related to Mass'. The 'Structural' section shows 'Structural Usage' set to 'Non-bearing'. The 'Dimensions' section shows 'Area' and 'Volume'. The 'Identity Data' section shows 'Comments', 'Mark', and 'Edited by'. The 'Apply' button is at the bottom right.

Basic Wall	
Basic Wall	
Exterior - Brick and CMU on MTL	
Stud	

New Walls	
Basic Wall	
Exterior - Brick and CMU on MTL	
Stud	

Constraints	
Location Line	Finish Face: Exterior
Base Constraint	Level 1
Base Offset	0' 0"
Base is Attached	<input type="checkbox"/>
Base Extension Dista...	0' 0"
Top Constraint	Up to level: Level 2
Unconnected Height	14' 0"
Top Offset	0' 0"
Top is Attached	<input type="checkbox"/>
Top Extension Distan...	0' 0"
Room Bounding	<input checked="" type="checkbox"/>
Related to Mass	<input type="checkbox"/>

Structural	
Structural Usage	Non-bearing

Dimensions	
Area	
Volume	

Identity Data	
Comments	
Mark	
Edited by	

[Properties help](#) Apply

Go to **edit type**, make sure you have chosen **Basic wall** as system family and type is the one that you want to modify. Always **duplicate** the type so that you won't lose the original type.

Type Properties

Family: System Family: Basic Wall Load...

Type: Exterior - Brick and CMU on MTL. Stud Duplicate... Rename...

Type Parameters

Parameter	Value
<b>Construction</b>	
Structure	Edit...
Wrapping at Inserts	Do not wrap
Wrapping at Ends	None
Width	1' 1 7/8"
Function	Exterior
<b>Graphics</b>	
Coarse Scale Fill Pattern	
Coarse Scale Fill Color	Black
<b>Identity Data</b>	
Keynote	
Model	
Manufacturer	
Type Comments	
URL	
Description	
Assembly Description	Exterior Walls
Assembly Code	03010

<< Preview OK Cancel Apply

Type Properties

Family: System Family: Basic Wall Load...

Type: Exterior - Brick and CMU on MTL. Stud Duplicate... Rename...

Type Parameters

Parameter	Value
<b>Construction</b>	
Structure	Edit...
Wrapping at Inserts	Do not wrap
Wrap	
Width	
Function	
<b>Graph</b>	
Coars	
Coars	
<b>Identity Data</b>	
Keynote	
Model	
Manufacturer	
Type Comments	
URL	
Description	
Assembly Description	Exterior Walls
Assembly Code	00010

<< Preview OK Cancel Apply

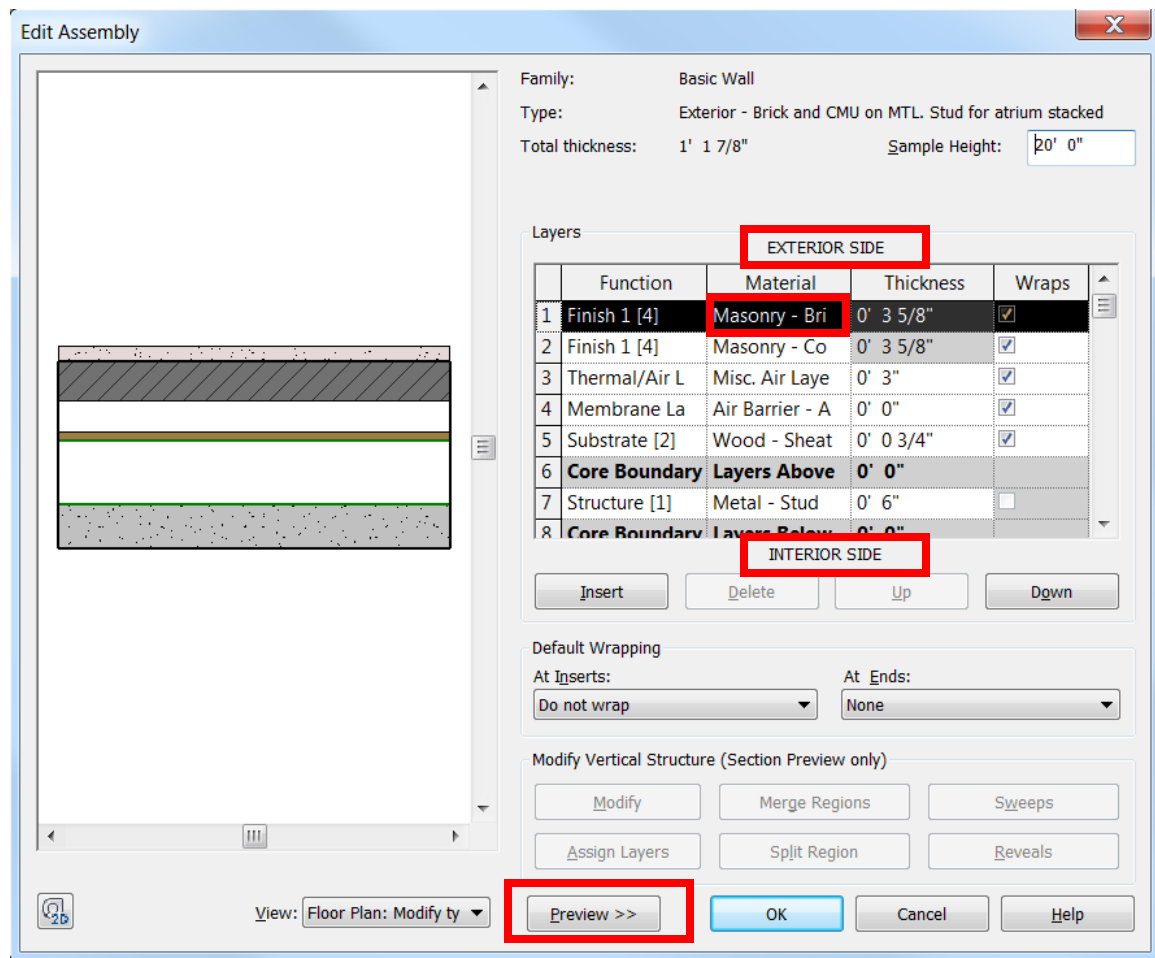
Name

Name: and CMU on MTL. Stud for stacked wall

OK Cancel

Choose a **name**; preferably include material and any information that shows the wall specification so that you won't get mixed up with different walls that you create.

Go to structure: edit

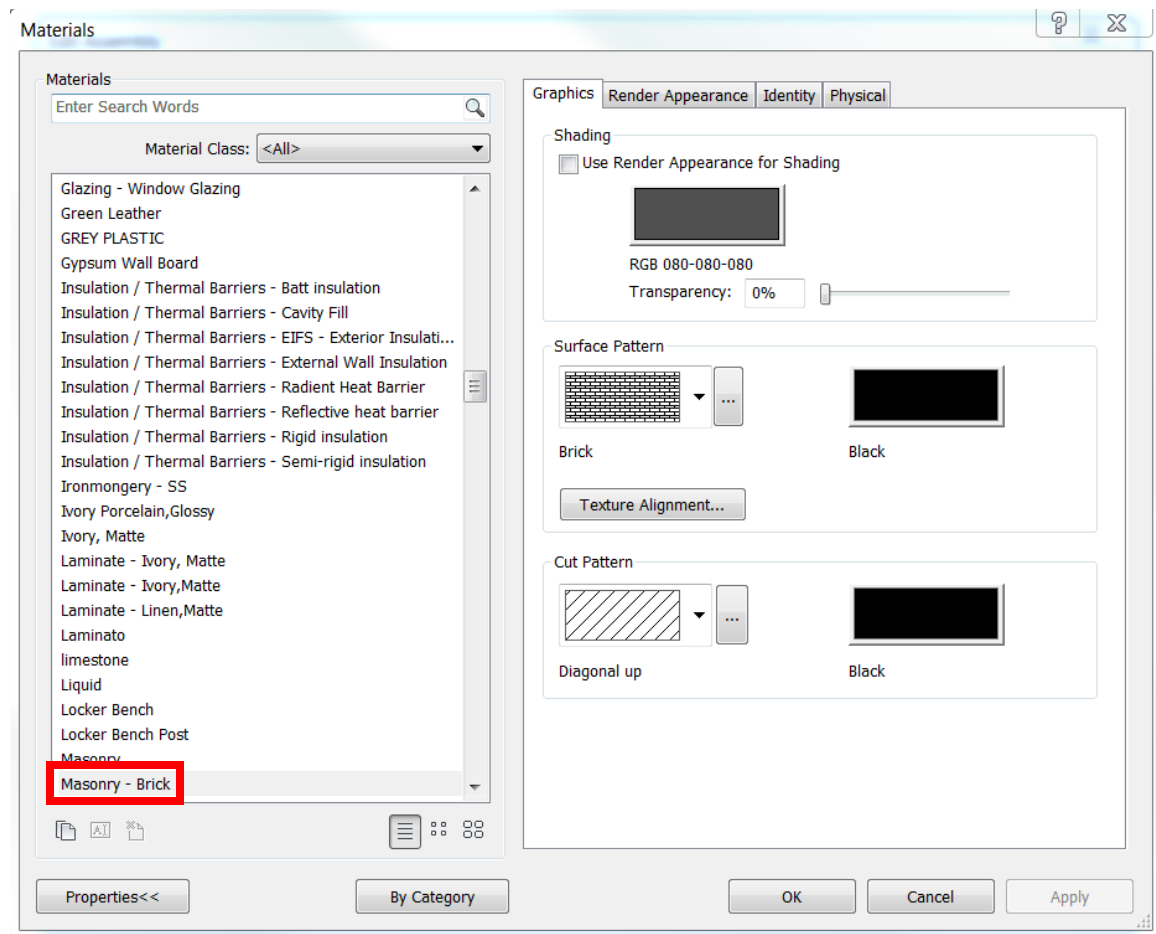


In the **preview** section on the bottom left you can see the cross section of the wall.

If you edit the upper layers, exterior material would change. Structure is shown between the core boundary rows and the layers on the bottom are interior materials.

You can also change the sequence of layers by hitting up and down while keeping the order of finishing descending to the outside; otherwise you will receive an error. You also can add to the layers by insert or delete any of them which you find unnecessary.

In this example we want to keep the **Function** of exterior material as **Finish**, and change the **material** to another type of brick. Click on Masonry- Brick, the Material section will open.



Choose one of the materials from Revit material library or create your own and hit ok. You can always modify the thickness and decide if you want the material be **wrapped** at the inserts or ends.

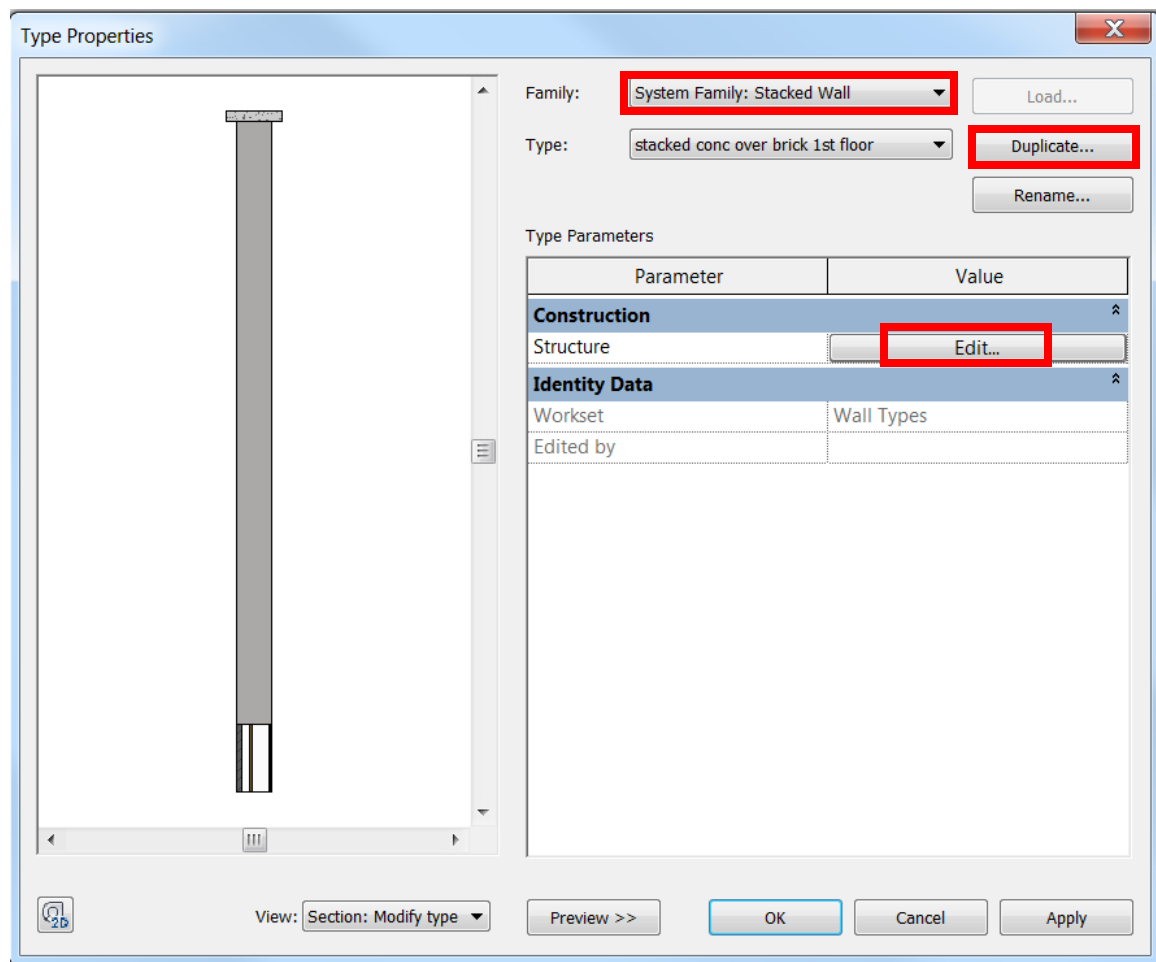
Do the same for interior finishing and choose plywood as finishing material.

Hit ok and you have a new wall with customized material in depth.

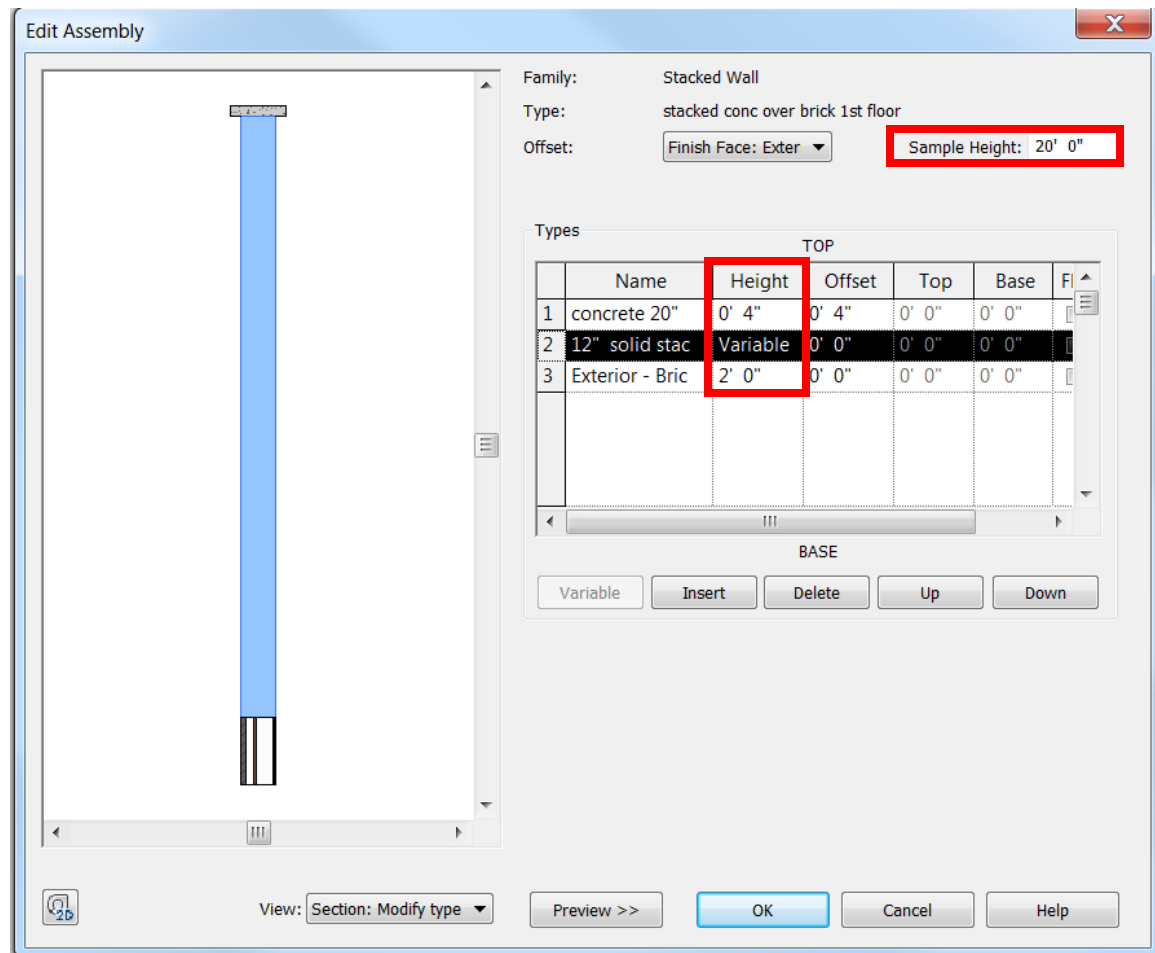
In this example we want to have 10' of CUM wall covered with brick from outside and wood panels from inside. The rest of the height will be made of an exterior wall with concrete finishing on both sides.

Repeat the same procedure to create an exterior wall with the mentioned specification if it already doesn't exist.

To make a wall that has different material in height go to Menu>Wall>edit type and choose Stacked wall as **system family**.



**Duplicate** the default one and name it. Hit **Edit** in front of structure and you will see the section of the wall. Hit any of the listed layers and the related part would turn blue.



Offset menu determines how much each layer will be placed related to the wall line.

**Sample height** is 20' by default; change it if you may have taller walls.

To create your costume stacked wall, hit on the name of the default types listed and a list of basic walls would come up, choose the customized wall that you have already created for first 10'. And write down 10' in the Height column. You can offset the wall if you want it to be pushed in or out a little.

Hit flip if you want the interior material outside or vice versa.

Choose any other basic wall that you want to be stacked on top of each other, move them up and down, insert and delete any of them until you're satisfied with the section.

If you want the wall to have for example 10' of brick, 2' of IEFS, the rest be concrete and a short overhang on top, specify the height of the walls that you are certain about and chose variable for the height of the type that may change.

For example in the multipurpose room with sloped roof I couldn't exactly know the height of the wall, in different sides of the space. I specified the first 10' and the concrete wall on top remained variable.

At the end hit ok and you have a new stacked wall. To use it scroll all the way down to the end of drop down menu to find stacked walls and choose yours.

